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The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

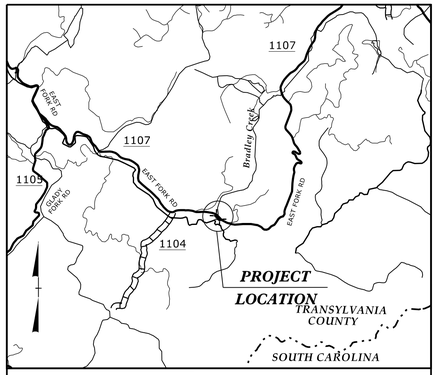
This is being re-let. The design has not changed, but the contract ID has. The seal and signatures on the cover sheet under the old contract ID DN00290 will serve the same purpose for DN00675. Both sheets are included for your record.

DocuSign Envelope ID: C0686043-42A4-4AE1-AE65-6E4A0C906136

WBS: 17BP.14.R.122

CONTRACT: DN00290

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

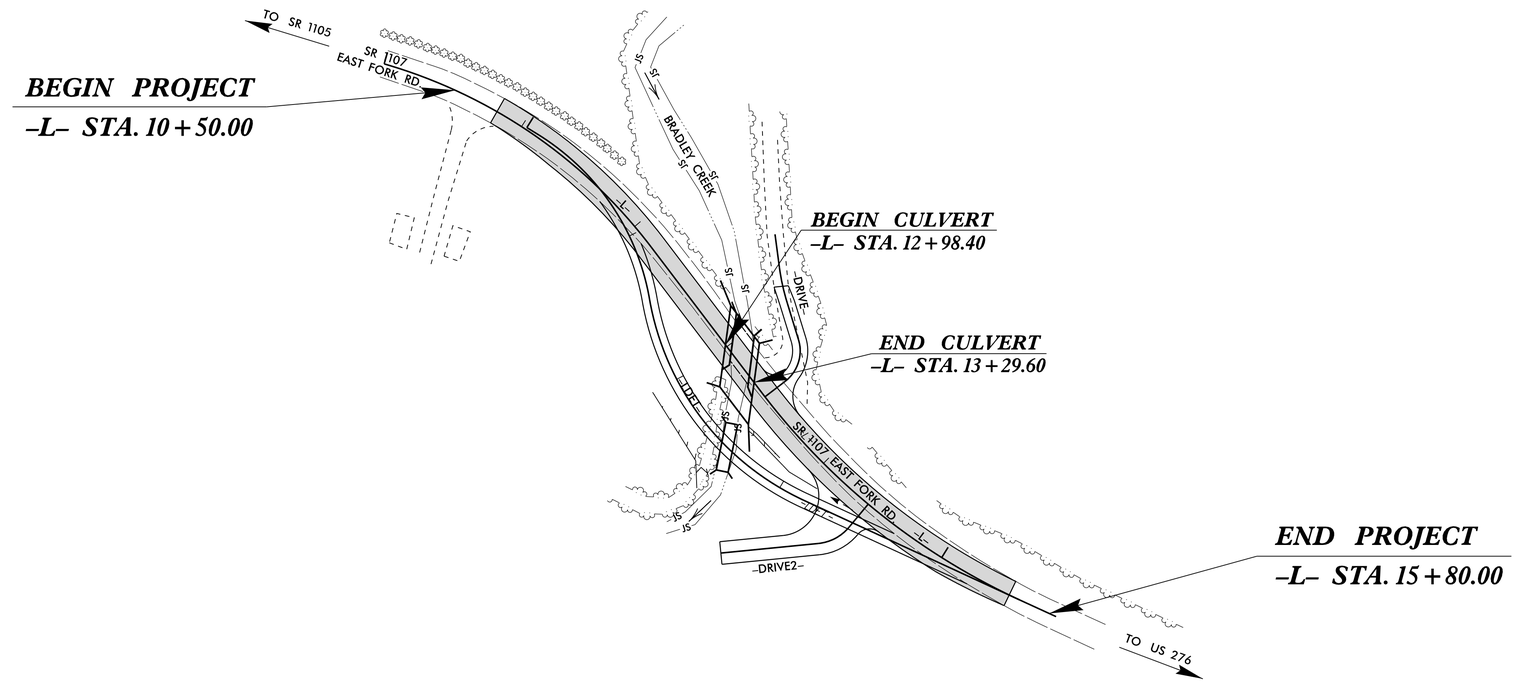
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.122	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.122	N/A	PE
17BP.14.R.122	N/A	ROW
17BP.14.R.122	N/A	CONST.

LOCATION: BRIDGE No. 137 ON SR 1107 (EAST FORK ROAD) OVER BRADLEY CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE (CULVERT)

NAD 83/2001



100% ROADWAY PLANS
SUBMITTAL NO: D-010
DATE: JUNE 3, 2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 280

T = 6 %
V = 35 MPH

FUNC CLASS =
LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY = 0.094 MILES
LENGTH STRUCTURE = 0.006 MILES
TOTAL LENGTH = 0.100 MILES

PLANS PREPARED BY:
RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
2014

LETTING DATE:

JENNIFER FARINO, PE
PROJECT ENGINEER

SEAN KORTOVICH, PE
PROJECT DESIGNER

JOSH DEYTON, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030188 ENGINEER WILL J. WEATHERSBEE
DocuSigned by: 10/31/2018 8:47:00 AM EDT
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO
DocuSigned by: 10/31/2018 8:46:45 AM EDT
SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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09/08/99

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09/08/99

WBS: 17BP.14.R.122

REVISION 01-17-19: UPDATED CONTRACT NUMBER FROM DN00290 TO BE DN00675.

CONTRACT: DN00675

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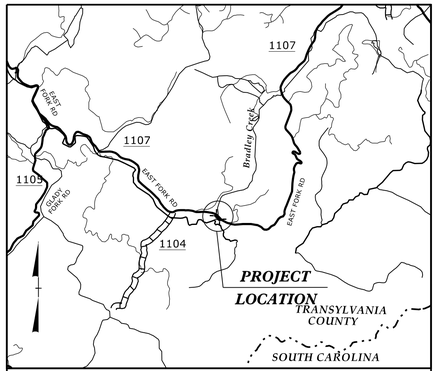
See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.122	1	

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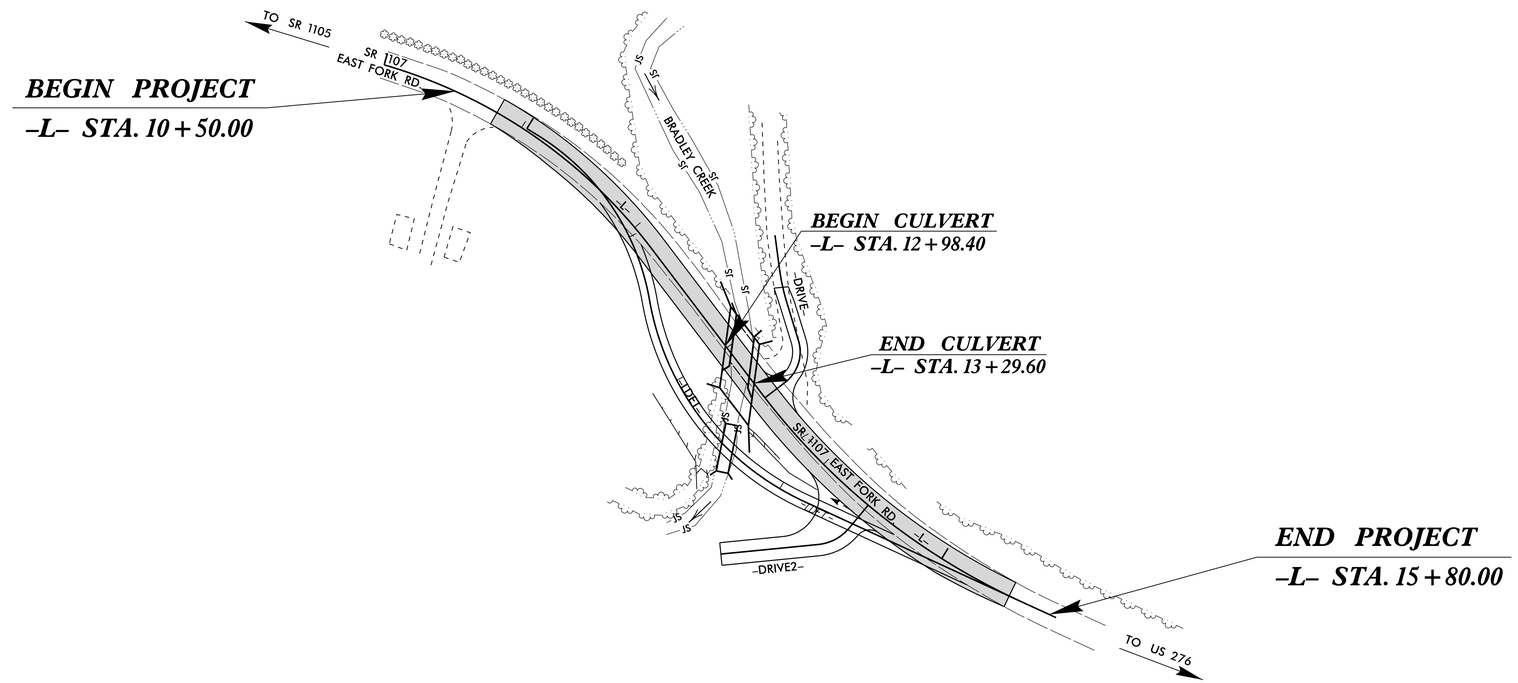

100% ROADWAY PLANS
SUBMITTAL NO: D-010
DATE: JUNE 3, 2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

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LOCAL
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RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
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JENNIFER FARINO, PE
PROJECT ENGINEER

SEAN KORTOVICH, PE
PROJECT DESIGNER

JOSH DEYTON, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS.

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY :

WILL J. WEATHERSBEE

036188 ON 10-31-2018

THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.

P.E.

SIGNATURE:

ROADWAY DESIGN ENGINEER

NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS.

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY :

JENNIFER D. FARINO

030952 ON 10-31-2018

THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.

P.E.

SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
I7BPJ4.RJ22	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FALKINO

DocuSigned by: 5E5E92709841...

11/26/2018 4:43:21 PM EST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1 THRU 2A-2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2B-1	DETOUR PLAN SHEET
2C-1	ARCH REINFORCED SANDBAG HEADWALL DETAIL
2C-2	AT-1 GUARDRAIL DETAIL
2C-3	25' GUARDRAIL CLEAR SPAN DETAIL
3B-1	SUMMARY OF TEMPORARY PIPES, SUMMARY OF GUARDRAIL, SUMMARY OF TEMPORARY GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-8	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS SECTION SUMMARY
X-1 THRU X-17	CROSS SECTIONS
C-1 THRU C-3	STRUCTURE PLANS
SN	STRUCTURE STANDARD NOTES

GENERAL NOTES

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-18
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

COMPORIUM COMMUNICATIONS

DUKE ENERGY

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2012 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels

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12/05/11

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.RJ22	1B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 87-0137
- FINAL -

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	515457.0537	883372.7762	2421.29	OUTSIDE PROJECT LIMITS	
2	BL-2	515598.7640	883185.9824	2406.28	13+73.17	5.04 RT
3	BL-3	515851.6902	882945.6139	2408.92	10+23.84	13.76 LT

****
BM1 ELEVATION = 2412.50
N 515563 E 883275
L STATION 14+66.07 28.68' LEFT
NAIL IN BASE OF 15" PINE
****

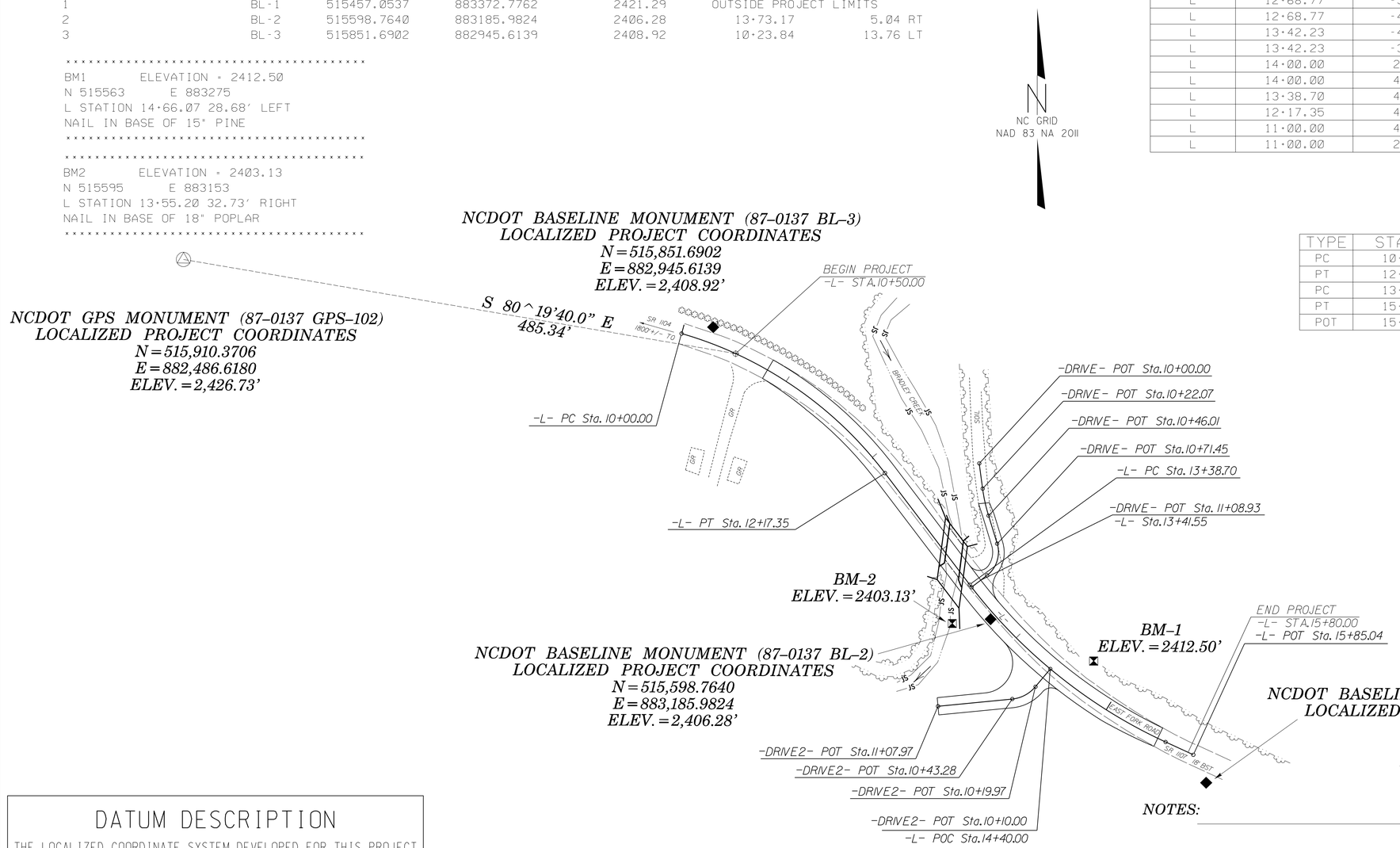
****
BM2 ELEVATION = 2403.13
N 515595 E 883153
L STATION 13+55.20 32.73' RIGHT
NAIL IN BASE OF 18" POPLAR
****

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+68.77	-36.58	515706.5343	883154.6584
L	12+68.77	-43.00	515710.4216	883159.7724
L	13+42.23	-43.00	515652.2190	883204.0303
L	13+42.23	-36.74	515648.3926	883199.0776
L	14+00.00	23.76	515565.7891	883191.3714
L	14+00.00	40.00	515554.2953	883179.8957
L	13+38.70	40.00	515604.5266	883136.0103
L	12+17.35	40.00	515701.1330	883062.5760
L	11+00.00	40.00	515771.2308	882987.0693
L	11+00.00	28.66	515780.7422	882993.2426

-L- FINAL

TYPE	STATION	NORTH	EAST
PC	10+00.00	515846.1970	882918.2203
PT	12+17.35	515725.3391	883094.4203
PC	13+38.70	515628.7327	883167.8546
PT	15+58.56	515492.4422	883337.5879
POT	15+85.04	515481.3462	883361.6385



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "87-0137 GPS-102" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 515,910.3706(ft) EASTING: 882,486.6180(ft) ELEVATION: 2,426.73(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99976427
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "87-0137 GPS-102" TO -L- STATION 10+50.00 IS S 80°19'40.0' E 485.34'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOID MODEL - G12ANC
NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

THE FILES TO BE FOUND ARE AS FOLLOWS:
87-0137_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

△ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

6/2/99
\\CLT\FILE01\Transportation\PX\033185000 Division 14 YR4 17BP Bridges Group 4\033185137 Bridge 870137\Correspondence and Communication\Client\From NCDOT\20160603_Revised Survey Control Sheet\870137_ls_1c-1.dgn
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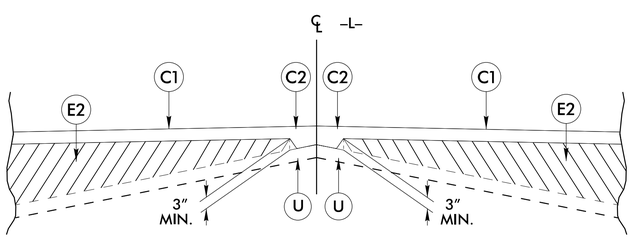
6/2/99

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1″ IN DEPTH OR GREATER THAN 1 1/2″ IN DEPTH.
E1	PROP. APPROX. 5½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.
J1	6″ ABC
J2	8″ ABC
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
NOTE: FEATHER ASPHALT 0″ TO 3″ FROM -L- STA. 10+50.00 TO -L- STA. 10+81.00 AND FROM -L- STA. 15+51.00 TO -L- STA. 15+80.00.



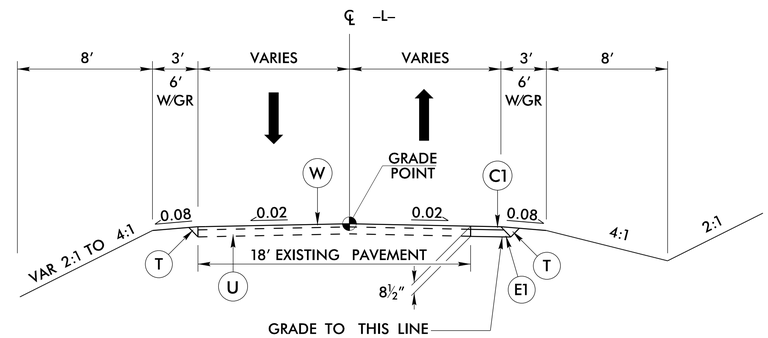
STANDARD WEDGING DETAIL

BRIDGE NO. 137

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO 3/30/2018

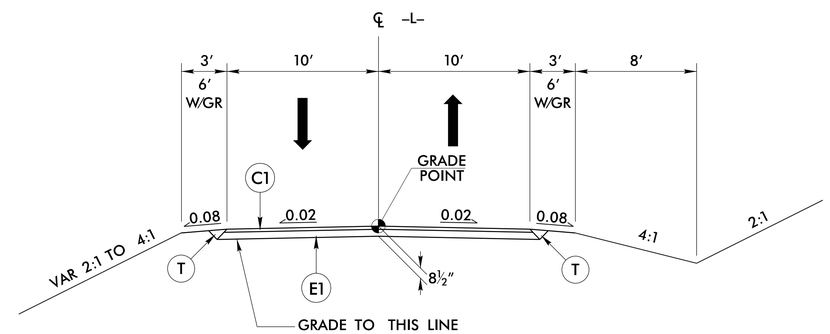
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

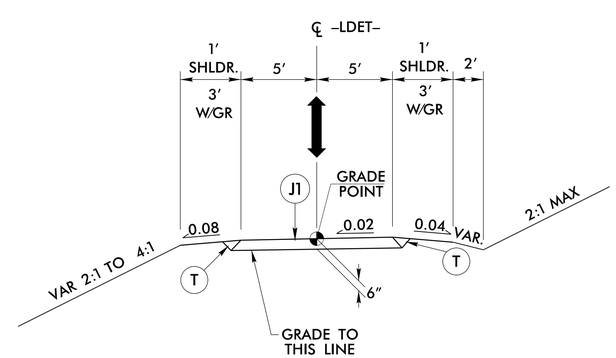
-L- STA. 10+81.00 TO -L- STA. 11+31.00
-L- STA. 15+01.00 TO -L- STA. 15+51.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 11+31.00 TO -L- STA. 15+01.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-LDET- STA. 10+92.03 TO -LDET- STA. 14+05.23

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6/2/99

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1″ IN DEPTH OR GREATER THAN 1 1/2″ IN DEPTH.
E1	PROP. APPROX. 5½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.
J1	6″ ABC
J2	8″ ABC
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
NOTE: FEATHER ASPHALT 0″ TO 3″ FROM -L- STA. 10+50.00 TO -L- STA. 10+81.00 AND FROM -L- STA. 15+51.00 TO -L- STA. 15+80.00.

BRIDGE NO. 137

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.J22	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO
DocuSigned by: 5D3E5E3C098415...
3/30/2018

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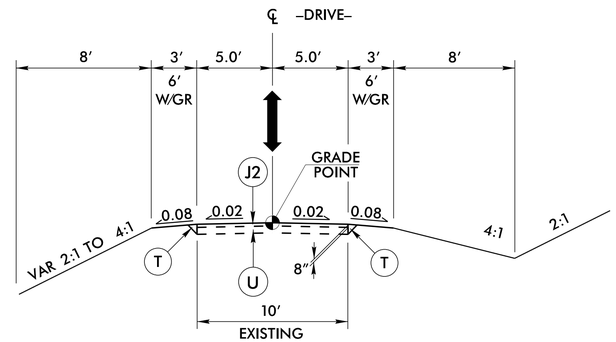
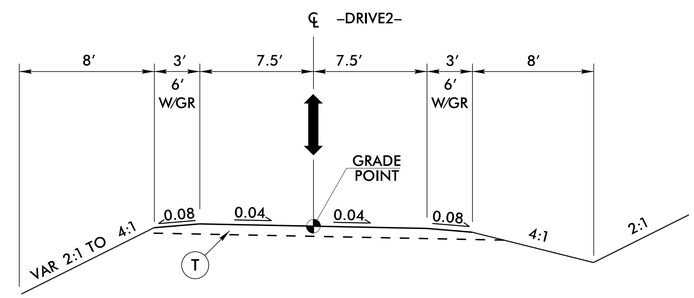


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

–DRIVE– STA. 10+34.73 TO –DRIVE– STA. 11+08.93



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

–DRIVE2– STA. 10+10.00 TO –DRIVE2– STA. 11+07.97

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8/17/99

REVISIONS

BRIDGE NO. 137

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARING — Digitally signed by — 4/2/2018

NORTH CAROLINA PROFESSIONAL SEAL 30188 ENGINEER WILL L. WEATHERSBEE — Digitally signed by — 4/2/2018

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NAD 83/NA 2011

-LDET- CURVE DATA

PI Sta 10+81.05
△ = 48° 13' 57.5" (RT)
D = 35° 48' 35.5"
L = 134.69'
T = 71.63'
R = 160.00'
V = 25 MPH
SE = 02

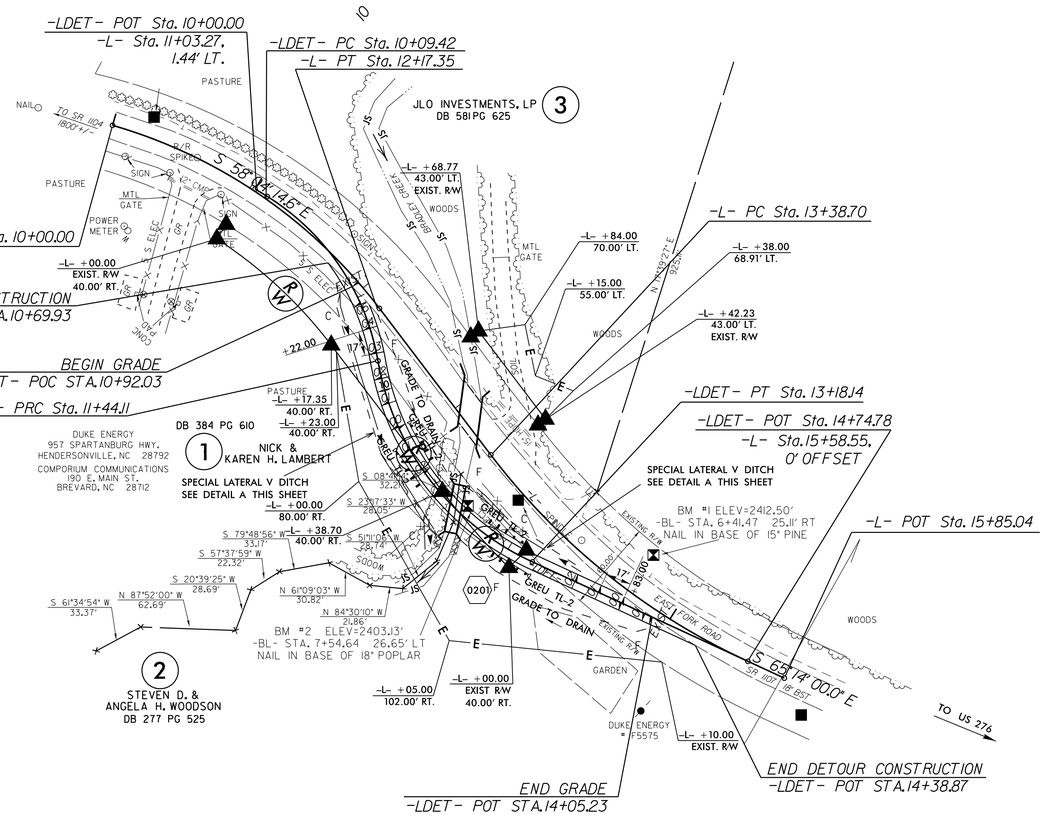
PI Sta 12+38.61
△ = 55° 23' 43.0" (LT)
D = 31° 49' 51.6"
L = 174.03'
T = 94.49'
R = 180.00'
V = 25 MPH
SE = 02

-L- CURVE DATA

PI Sta 11+12.53
△ = 36° 37' 36.4" (RT)
D = 16° 51' 06.1"
L = 217.35'
T = 112.53'
R = 340.00'
V = 35 MPH
SE = 06

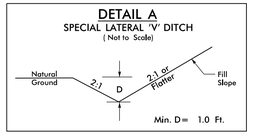
PI Sta 14+50.87
△ = 27° 59' 36.4" (LT)
D = 12° 43' 56.6"
L = 219.86'
T = 112.17'
R = 450.00'
V = 35 MPH
SE = 06

NOTE: USE SANDBAG HEADWALLS AT INLET AND OUTLET OF DETOUR TEMPORARY PIPE.

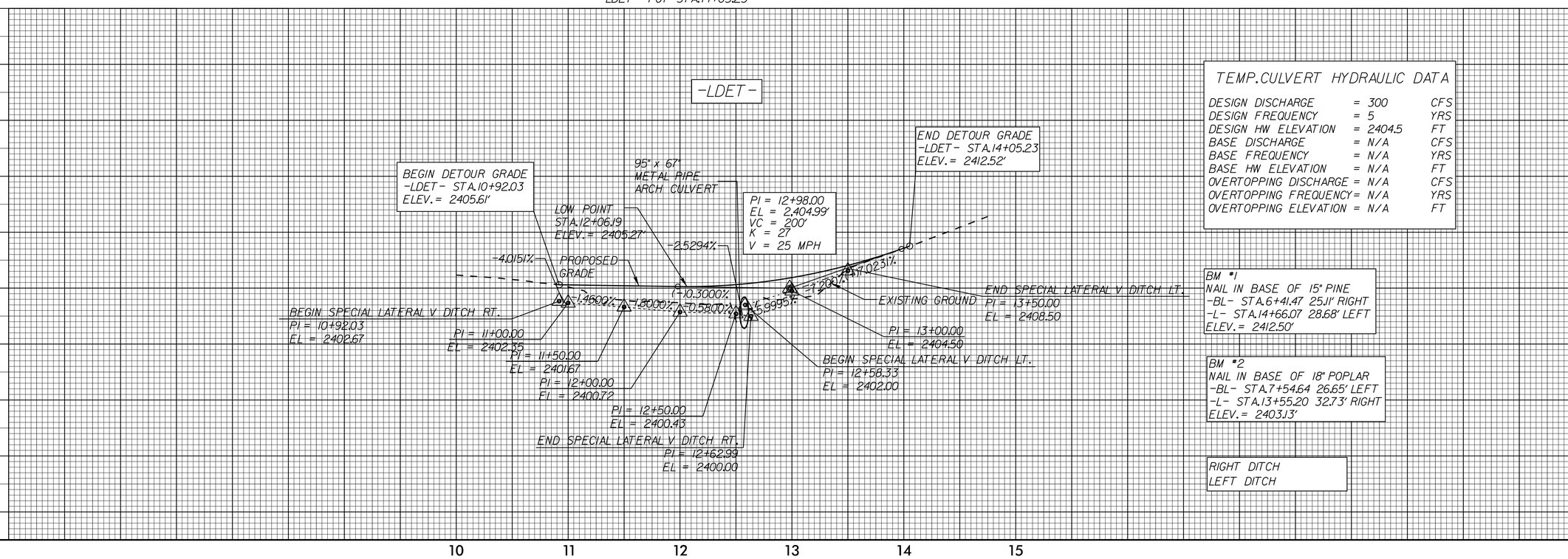


FOR ROADWAY PLAN, SEE SHEET 4

DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 10+92 TO STA. 12+62.99 -LDET- (RT)
FROM STA. 12+58.33 TO STA. 13+50 -LDET- (LT)



TEMP.CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	300	CFS
DESIGN FREQUENCY	=	5	YRS
DESIGN HW ELEVATION	=	2404.5	FT
BASE DISCHARGE	=	N/A	CFS
BASE FREQUENCY	=	N/A	YRS
BASE HW ELEVATION	=	N/A	FT
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING ELEVATION	=	N/A	FT

BM #1
NAIL IN BASE OF 15" PINE
-BL- STA.6+41.47 25.11' RIGHT
-L- STA.14+66.07 28.68' LEFT
ELEV.= 2412.50'

BM #2
NAIL IN BASE OF 18" POPLAR
-BL- STA.7+54.64 26.65' LEFT
-L- STA.13+55.20 32.73' RIGHT
ELEV.= 2403.13'

RIGHT DITCH
LEFT DITCH

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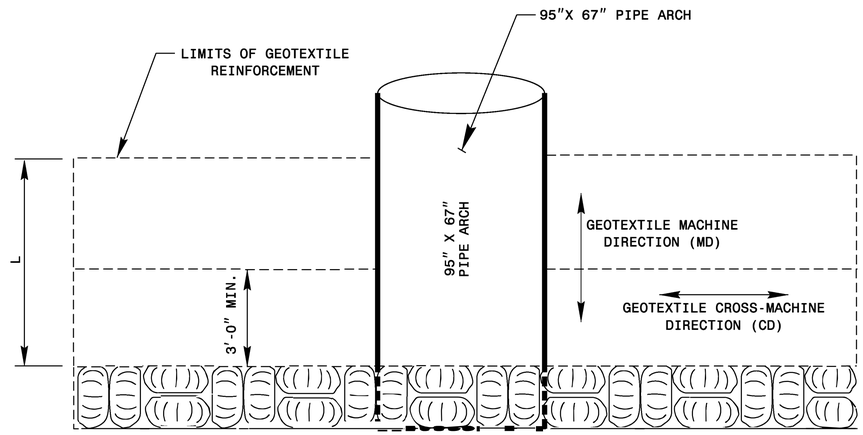
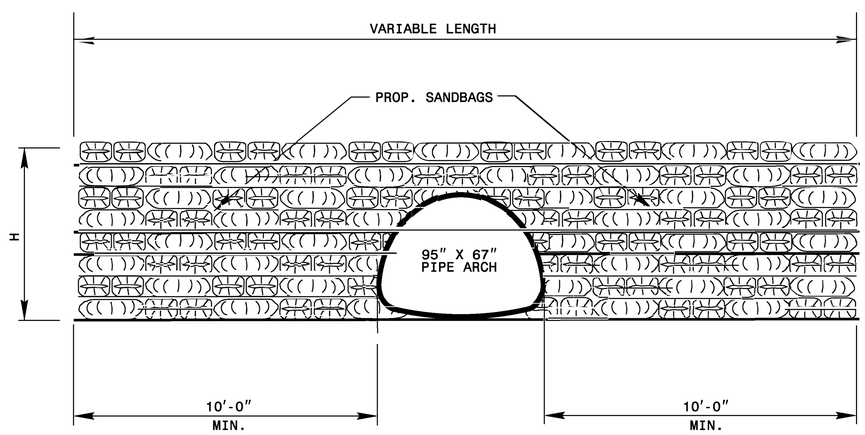
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	2C-1



PLAN



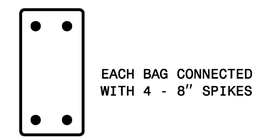
FRONT ELEVATION

GENERAL NOTES:

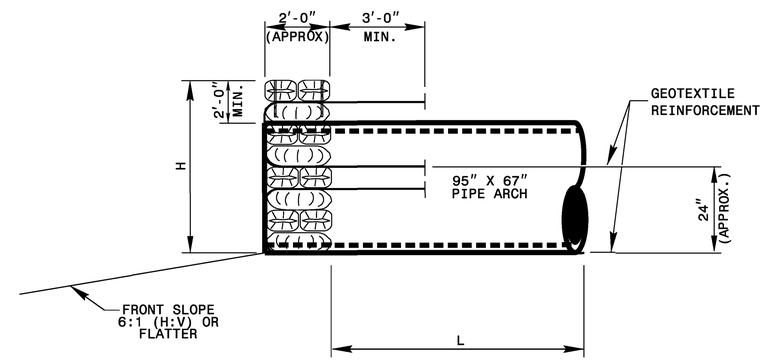
1. FOR REINFORCED SANDBAG HEADWALLS, SEE SANDBAG HEADWALLS PROVISION.
2. REINFORCED SANDBAG HEADWALLS ARE BASED ON A TRAFFIC SURCHARGE OF 250 LB/SF OR LESS AND A BACK SLOPE OF 2:1(H:V) OR FLATTER.
3. REINFORCED SANDBAG HEADWALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:

   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF

4. DO NOT USE REINFORCED SANDBAG HEADWALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE REINFORCED SANDBAG HEADWALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW SANDBAGS OR PIPES.
6. DO NOT PLACE GEOTEXTILE REINFORCEMENT OR SANDBAGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
7. 24" LONG #4 REINFORCING STEEL BARS MAY BE SUBSTITUTED FOR 8" LONG STEEL SPIKES. DRIVE #4 BAR THROUGH NO MORE THAN 5 SANDBAGS.
8. DO NOT SPLICE OR OVERLAP GEOTEXTILE REINFORCEMENT SO SEAMS ARE PARALLEL TO THE HEADWALL FACE.
9. HEADWALL DIMENSIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.



SANDBAG PLAN VIEW



SIDE ELEVATION

GEOTEXTILE REINFORCEMENT (TYPE 5 GEOTEXTILE)		
WALL HEIGHT H (ft)	REINF. LENGTH L (ft)	WIDE WIDTH TENSILE STRENGTH @ ULTIMATE (MD) (lb/ft)
< 4	6	2400
4 TO 6	6	3400
6 TO 8	= H	4300
8 TO 10	= H	5200

TOTAL AREA SANDBAG HEADWALL = 185 S.F.

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CONTRACT STANDARDS AND DEVELOPMENT UNIT
PLANS AND STANDARDS SECTION
Office 919-707-6950 FAX 919-250-4119

DETAIL OF 95"X 67"ARCH REINFORCED SANDBAG HEADWALL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 08-22-2012
CHECKED BY: _____ DATE: _____
FILE SPEC.: details/rnbritt/english/hydro/b4547archsbhw.dgn

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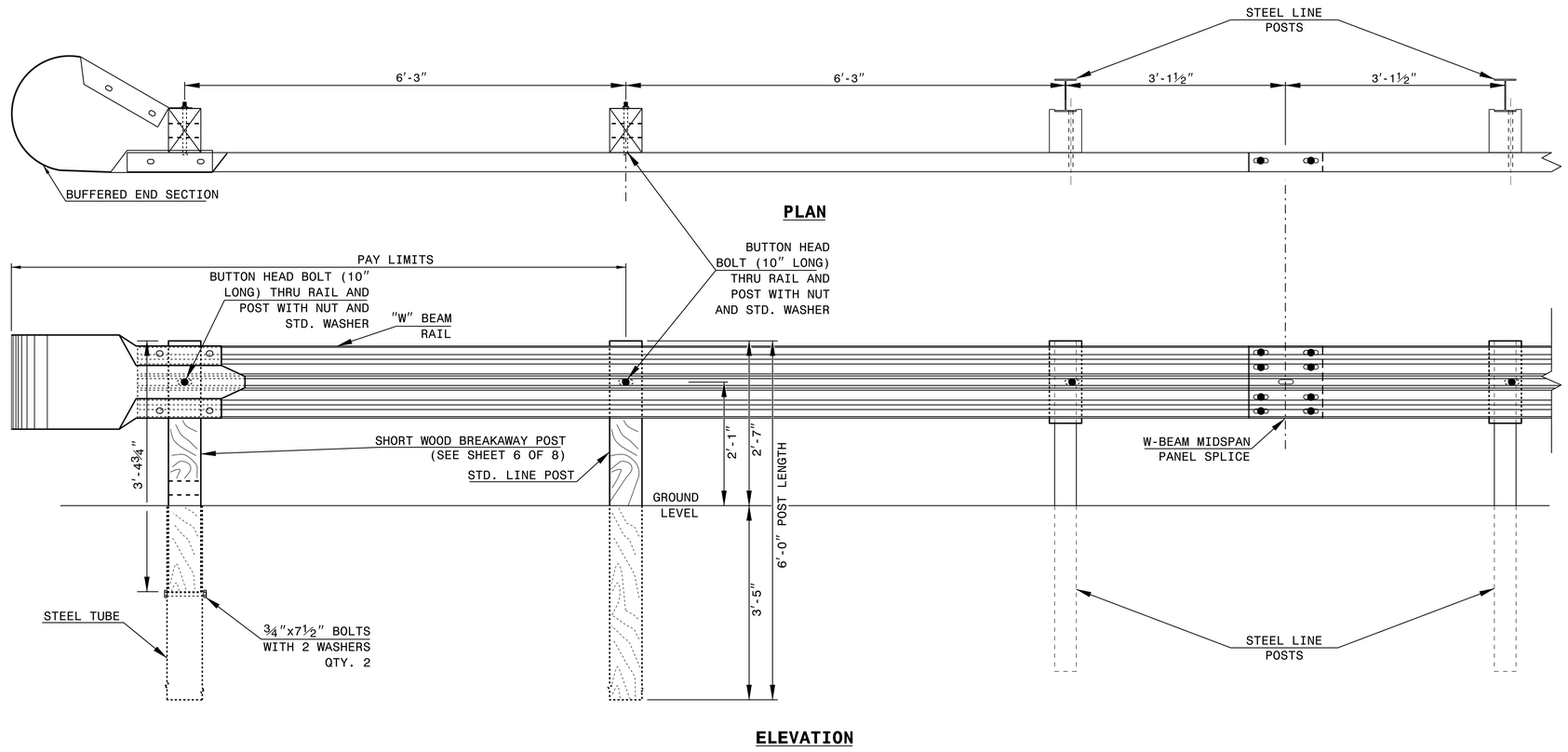
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	2B-2

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF



TRAILING END UNIT ASSEMBLY

A.T.-1 SYSTEM

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

3/27/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

A.T.-1 SYSTEM

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MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

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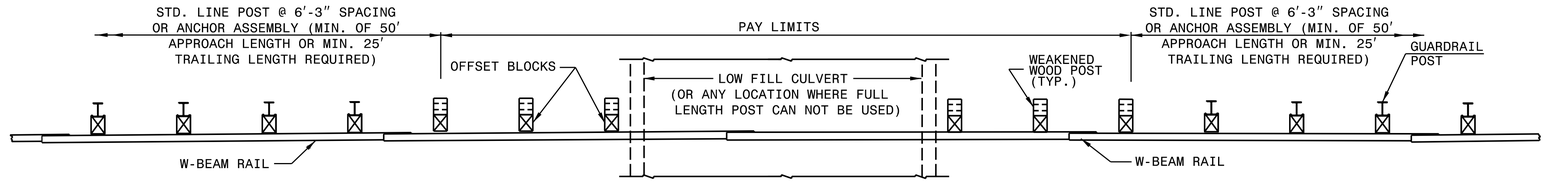
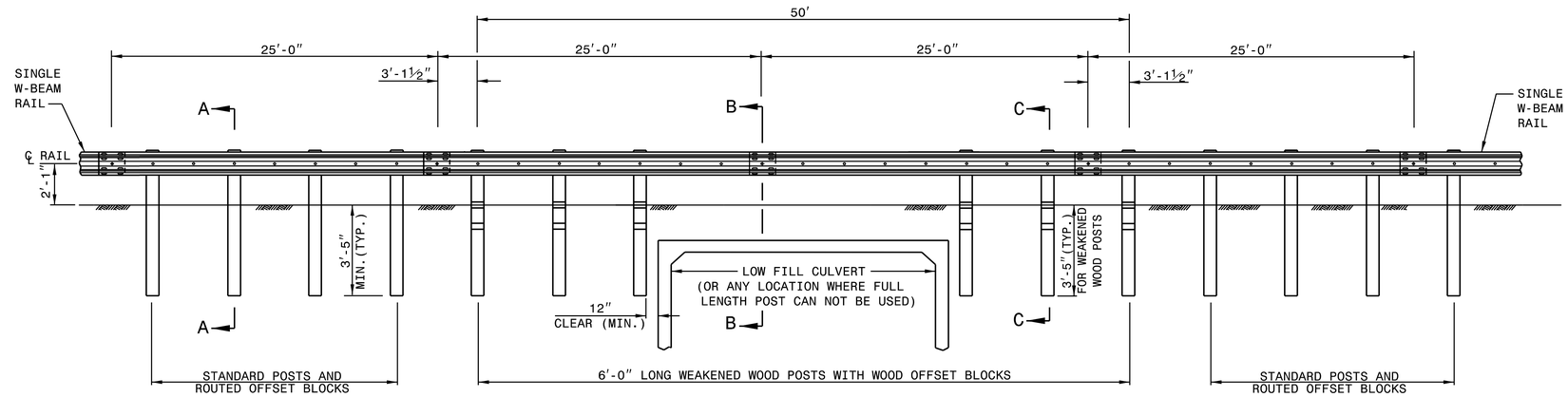
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	2B-3

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

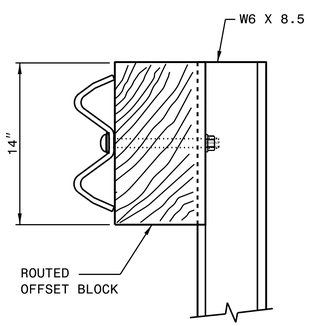
SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN



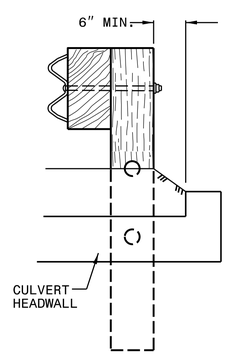
PLAN



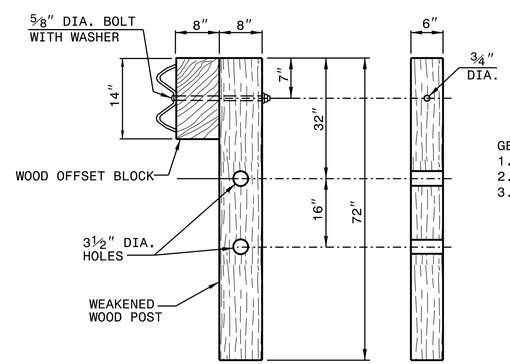
ELEVATION
25'-0" GUARDRAIL SPAN



SECTION A-A



SECTION B-B



SECTION C-C **FRONT**
WEAKENED WOOD POST

GENERAL NOTES:
1. LAP RAIL IN THE DIRECTION OF TRAFFIC FLOW.
2. SEE ROADWAY PLANS FOR LOCATIONS AND CONTINUATION OF RAIL OR END SECTIONS.
3. MINIMUM DISTANCE OF 5 FEET BEHIND THE GUARDRAIL SHOULD BE CLEAR OF ANY FIXED-OBJECT HAZARDS THAT COULD SNAG AN IMPACTING VEHICLE.

SHEET - OF -
862D01

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

SHEET - OF -
862D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON
DocuSigned by: Joel S. Howerton
3/27/2018

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

25'-0" CLEAR SPAN GUARDRAIL PLACEMENT

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

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12/06/07

COMPUTED BY: SMK DATE: 6-10-14
CHECKED BY: JMT DATE: 10-30-14

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +15%	BORROW	WASTE
PHASE I: DETOUR & DRIVES CONSTRUCTION					
-L- STA. 12+00.00	-L- STA. 14+50	39	821	782	
-DRIVE- STA. 10+34.73	-DRIVE- STA. 11+10	3	36	33	
-DRIVE2- STA. 10+10	-DRIVE2- STA. 11+07.97		320	320	
PHASE II: L CONSTRUCTION					
-L- STA. 10+81	-L- STA. 15+51	32	896	864	
PHASE III: DET. REMOVAL & GRADING					
-L- STA. 12+00	-L- STA. 14+50	595	31		564
SUMMARIES SUBTOTAL:		669	2104	1999	564
5% TO REPLACE TOPSOIL				100	
PROJECT TOTALS:		669	2104	2099	564
GRAND TOTALS:		669	2104	2099	564
SAY:		680		2100	

EST. UNDERCUT = 50 CY (CONTINGENCY)
EST. SELECT GRANULAR MATERIAL = 50 CY (CONTINGENCY)
EST. FABRIC FOR SOIL STABILIZATION = 50 SY (CONTINGENCY)

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-L-	11+31.00	13+06.00	CL	343.58
-L-	13+10.00	15+01.00	CL	356.36
			TOTAL:	699.94
			SAY:	700.00

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE PAID OR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

LIST OF TEMPORARY PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"	BITUMINOUS COATED C.S. PIPE TYPE B 54" .109	54" .138	54" .168	54" SHOP ELON-GATED .138	54" SHOP ELON-GATED .168	60" .138	60" .168	66" .138	66" .168	72" .138	72" .168	STRUCTURAL PLATE PIPE 60" 12	60" 10	60"	66" 12	66" 10	66"	72" 12	72" 10	REINFORCED ENDWALLS WITH R.C. - C.Y.	REINFORCED ENDWALLS WITH C.S. - C.Y.	MASONARY DRAINAGE STRUCTURES CUBIC YARDS	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
-LDET- STA. 12+56.00	CL				2397.86		0.5%																																		95"x67" METAL ARCH CULVERT, L =32'

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS GREU TL-2	ANCHORS AT-1	IMPACT ATTENUATOR TYPE 350 EA	IMPACT ATTENUATOR TYPE 350 G	IMPACT ATTENUATOR TYPE 350 NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	11+94.37	13+19.37	LT.	125.00'	37.50'		13+11.23 (HEADWALL)	12+80.03 (HEADWALL)	3'	6'		25'		0.5'	1	1							10' RADIUS W-BEAM SHOP CURVED SECTION
-L-	11+87.50	14+00.00	RT.	212.50'			13+18.18 (HEADWALL)	13+50.00	3'	6'	25'	25'	0.5'	0.5'	2								
			SUBTOTAL	337.50'	37.50'																		
			ANCHOR DEDUCTION	75.00'	6.25'																		
			TOTAL	262.50'	31.25'																		
			SAY	275.00'	31.25'																		

ANCHOR DEDUCTION
TYPE GREU TL-2: 3 @ 25' = 75.0'
TYPE AT-1: 1 @ 6.25' = 6.25'
GRAND TOTAL = 81.25'
ADDITIONAL GUARDRAIL POSTS = 5

TEMPORARY GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS GREU TL-2	IMPACT ATTENUATOR TYPE 350 EA	IMPACT ATTENUATOR TYPE 350 G	IMPACT ATTENUATOR TYPE 350 NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-LDET-	12+04.90	13+17.40	RT.	112.50'			12+61.06 (HEADWALL)	12+67.40 (HEADWALL)	1'	3'	25'	25'	0.5'	0.5'	2							
-LDET-	11+93.26	13+05.76	LT.	112.50'			12+50.16 (HEADWALL)	12+43.26 (HEADWALL)	1'	3'	25'	25'	0.5'	0.5'	2							
			SUBTOTAL	225.00'																		
			ANCHOR DEDUCTION	100.00'																		
			TOTAL	125.00'																		
			SAY	137.50'																		

ANCHOR DEDUCTION
TYPE GREU TL-2: 4 @ 25' = 100.0'
GRAND TOTAL = 100.0'
ADDITIONAL GUARDRAIL POSTS = 5

18-DEC-2017 14:18
R:\Roadway\Proj\B70137_Rdy_sum.dgn
$$$$USERNAME$$$$

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BRIDGE NO. 137

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO — 3/30/2018

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 30108 ENGINEER WILL I. WEATHERSBEE — 3/27/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

-L- CURVE DATA

PI Sta 11+12.53
△ = 36° 37' 36.4" (RT)
D = 16° 51' 06.1"
L = 217.35'
T = 112.53'
R = 340.00'
V = 35 MPH
SE = 06

PI Sta 14+50.87
△ = 27° 59' 36.4" (LT)
D = 12° 43' 56.6'
L = 219.86'
T = 112.17'
R = 450.00'
V = 35 MPH
SE = 06

-DRIVE- CURVE DATA

PI Sta 10+34.07
△ = 9° 28' 44.1" (LT)
D = 39° 34' 57.3"
L = 23.95'
T = 12.00'
R = 144.75'

PI Sta 10+88.96
△ = 69° 29' 51.4" (RT)
D = 226° 54' 50.3"
L = 30.63'
T = 17.52'
R = 25.25'

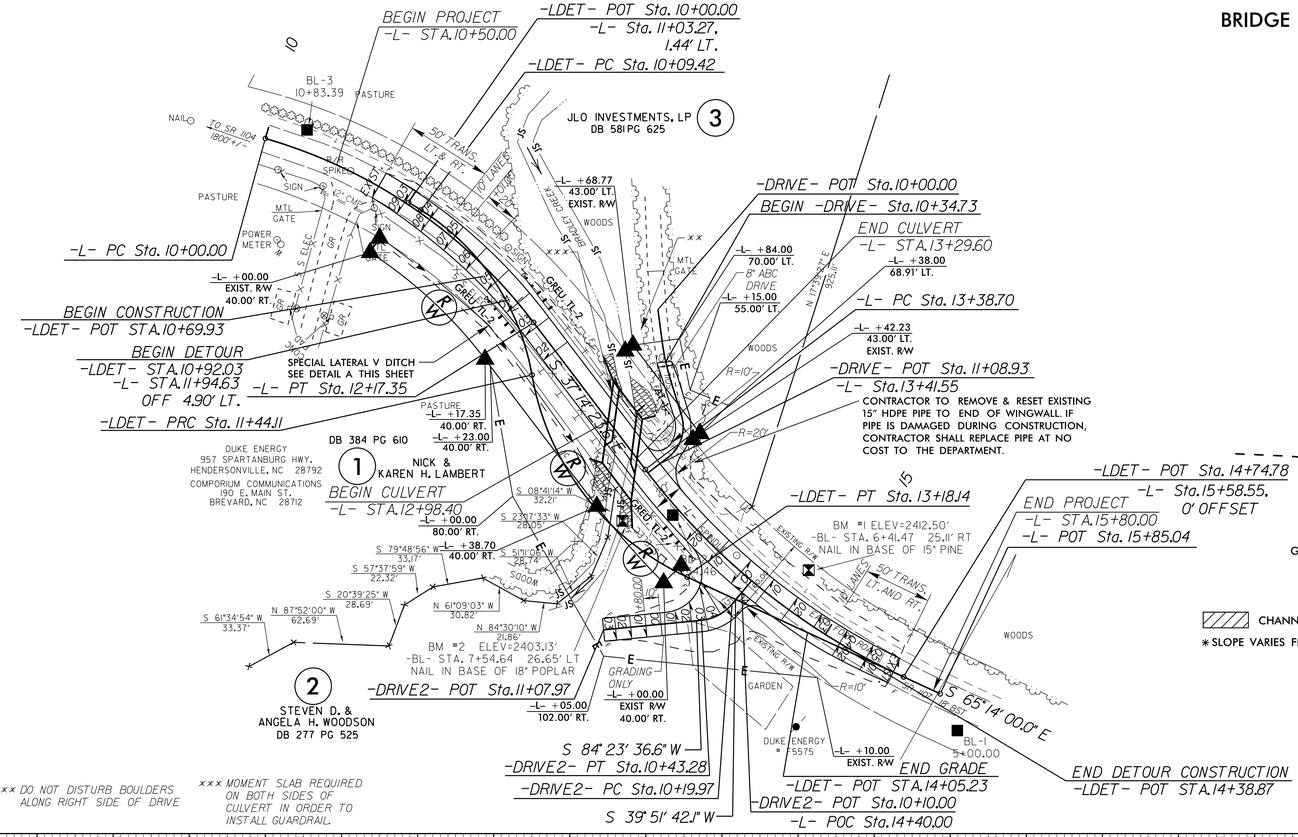
-DRIVE2- CURVE DATA

PI Sta 10+32.25
△ = 44° 31' 54.5" (RT)
D = 190° 59' 09.4"
L = 23.32'
T = 12.28'
R = 30.00'

-LDET- CURVE DATA

PI Sta 10+81.05
△ = 48° 13' 57.5" (RT)
D = 35° 48' 35.5"
L = 134.69'
T = 71.63'
R = 160.00'
V = 25 MPH
SE = 02

PI Sta 12+38.61
△ = 55° 23' 43.0" (LT)
D = 31° 49' 51.6"
L = 174.03'
T = 94.49'
R = 180.00'
V = 25 MPH
SE = 02

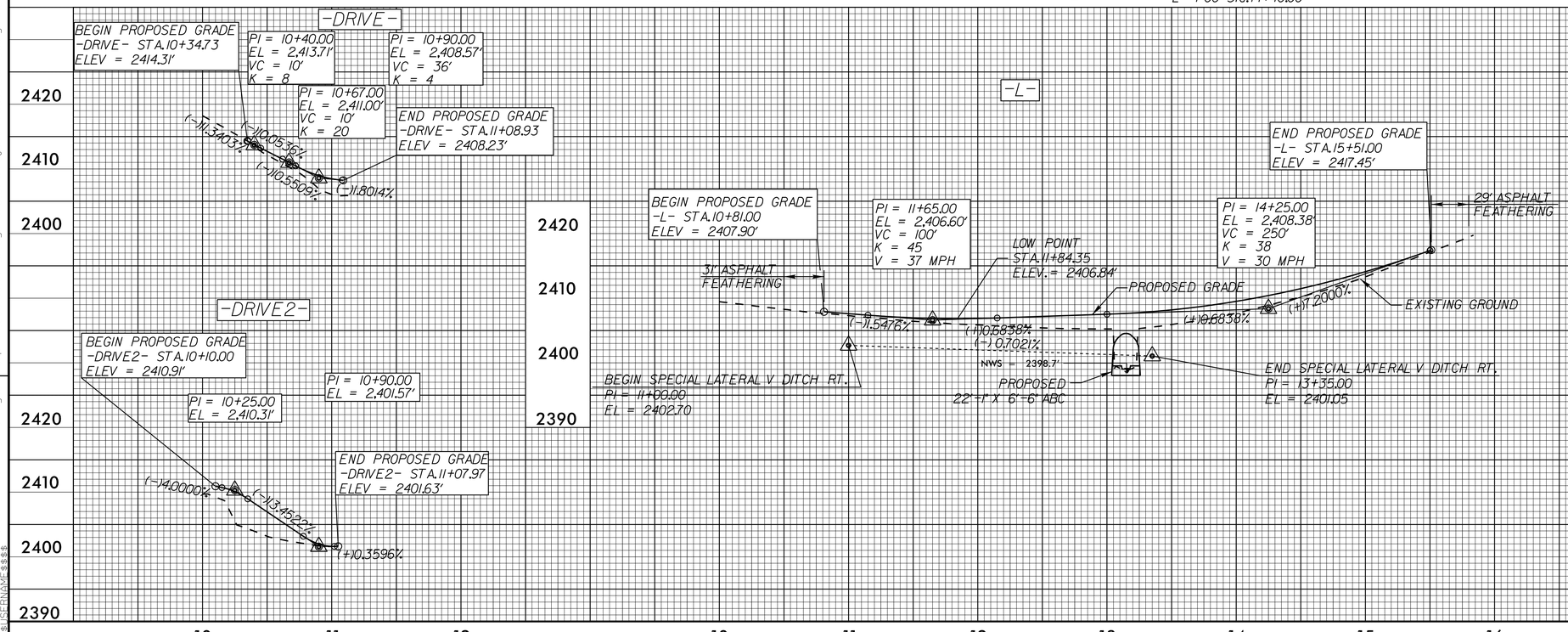


FOR DETOUR PLANS, SEE SHEET 2B-2

FOR CULVERT PLANS, SEE SHEET C-1 THRU C-3

** DO NOT DISTURB BOULDERS ALONG RIGHT SIDE OF DRIVE

*** MOMENT SLAB REQUIRED ON BOTH SIDES OF CULVERT IN ORDER TO INSTALL GUARDRAIL.



CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 550	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2403.4	FT
BASE DISCHARGE	= 800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2405.29	FT
OVERTOPPING DISCHARGE	= 930	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 2406.8	FT

BM #1
NAIL IN BASE OF 15" PINE
-BL- STA.6+41.47 25.11' RIGHT
-L- STA.14+66.07 28.68' LEFT
ELEV.= 2412.50'

BM #2
R/R NAIL IN BASE OF 18" POPLAR
-BL- STA.7+54.64 26.65' LEFT
-L- STA.13+55.20 32.73' RIGHT
ELEV.= 2403.13'

RIGHT DITCH ----------

REVISIONS

8/17/99

01-MAR-2018 11:20
X:\P\1033185000 Division 14 YR4 17BP Bridges Group 4\1033185137 Bridge 870137\Project Production\Design\Roadway\Proj\870137_Rdy_psh.dgn
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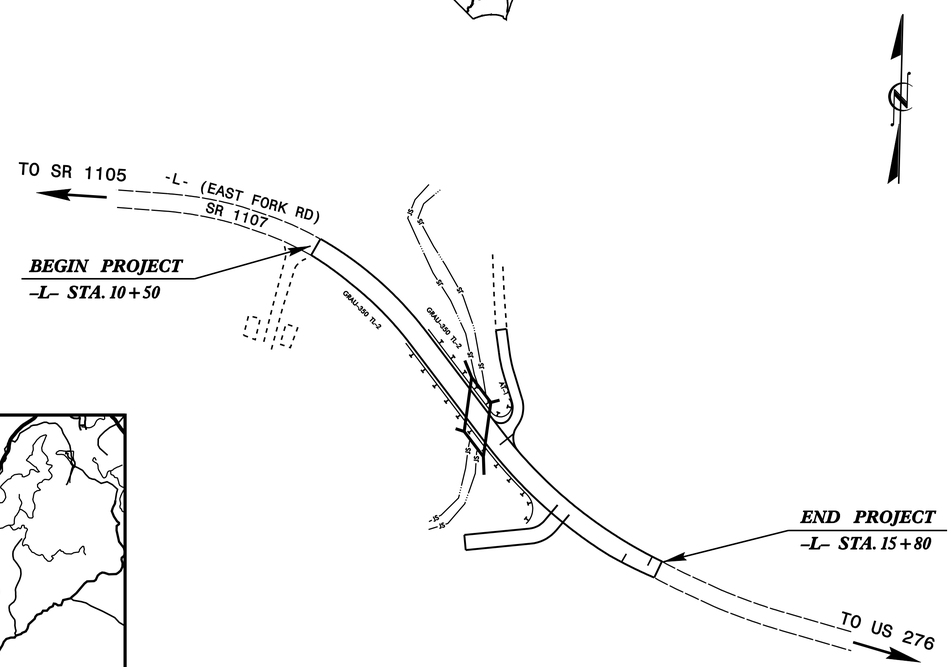
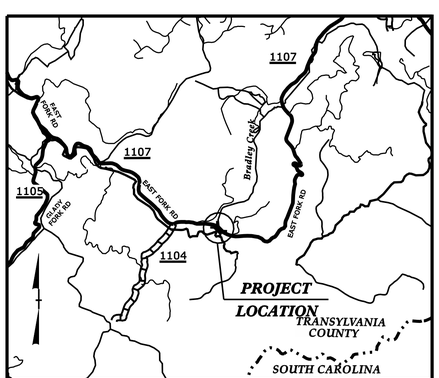
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

TRANSYLVANIA COUNTY





VICINITY MAP N.T.S.

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (PROJECT NOTES AND PHASING)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE DETAILS

SHEET NO.
TMP-1

17BP.14.R.122

WBS ELEMENT:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

_____ STATE TRAFFIC MANAGEMENT ENGINEER

_____ TRAFFIC CONTROL PROJECT ENGINEER

_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER

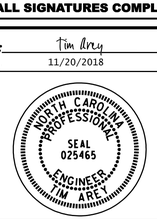
_____ TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

Prepared In the Office of:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Ilvey
DATE: 11/20/2018

SEAL



PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.122	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS FOR TWO-WAY UNDIVIDED FACILITIES
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT WEDGING

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN
- TRAFFIC SIGNAL

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 11/20/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.122	TMP-1B

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 ft IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

K) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 ft IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

PROJECT NOTES & PHASING

TRAFFIC BARRIER

L) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

M) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

N) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

O) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

LOCAL NOTES

1) CONTACT TRANSYLVANIA COUNTY EMERGENCY SERVICES AND SCHOOLS AT LEAST ONE MONTH PRIOR TO CONSTRUCTION.

PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01. (SEE LOCAL NOTE #1)

STEP 2: CONSTRUCT -LDET-, DRIVE 2 AND TEMPORARY DRAINAGE AS SHOWN ON SHEET TMP-2 (PHASE I DETAIL) AND INSTALL A PORTABLE TRAFFIC SIGNAL SYSTEM TO OPERATE THE ONE-LANE, TWO-WAY TEMPORARY PATTERN SHOWN ON SHEET TMP-2 (PHASE II DETAIL).

PHASE II

STEP 1: ACTIVATE THE PORTABLE TRAFFIC SIGNAL SYSTEM AND SHIFT TRAFFIC ONTO -LDET- IN A ONE-LANE, TWO-WAY PATTERN AS SHOWN ON SHEET TMP-2 (PHASE II DETAIL). MAINTAIN ACCESS TO DRIVEWAY LEFT OF STA. 12+50+/- -L- AS SHOWN ON SHEET TMP-2 (PHASE II DETAIL).

STEP 2: CONSTRUCT PROPOSED -L-, DRIVE 1 AND CULVERT AS SHOWN ON SHEET TMP-2 (PHASE II DETAIL) AND THE ROADWAY DESIGN PLANS. CONSTRUCT REMAINING SECTIONS OF -L- ROADWAY USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15.

STEP 3: USING THE PORTABLE TRAFFIC SIGNAL SYSTEM, SHIFT TRAFFIC INTO A ONE-LANE, TWO-WAY PATTERN ON THE FAR LEFT SIDE OF PROPOSED -L- AND CONSTRUCT THE REAMINING SECTIONS OF THE PROPOSED CULVERT WING WALLS ON THE DOWN STREAM SIDE OF BRADLEY CREEK AND REMOVE -LDET-.

STEP 4: SHIFT TRAFFIC TO THE FINAL PATTERN AND REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Ivey DATE: 1/20/2018

SEAL

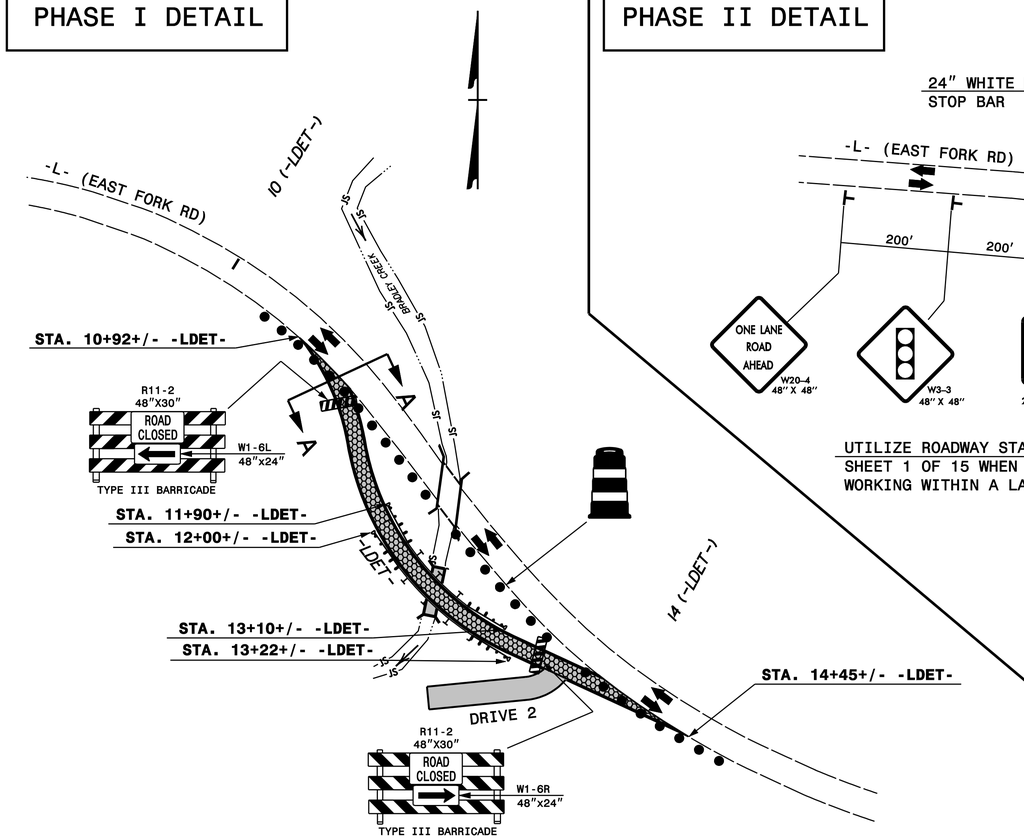
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

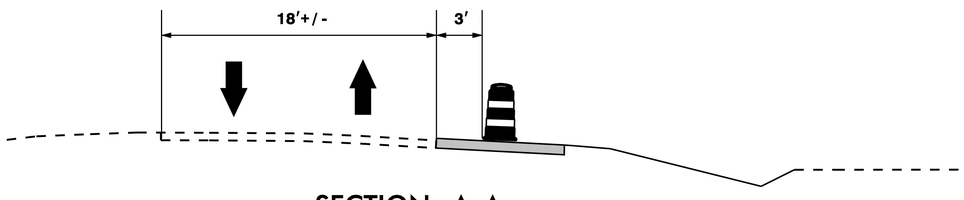
DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.122	TMP-2

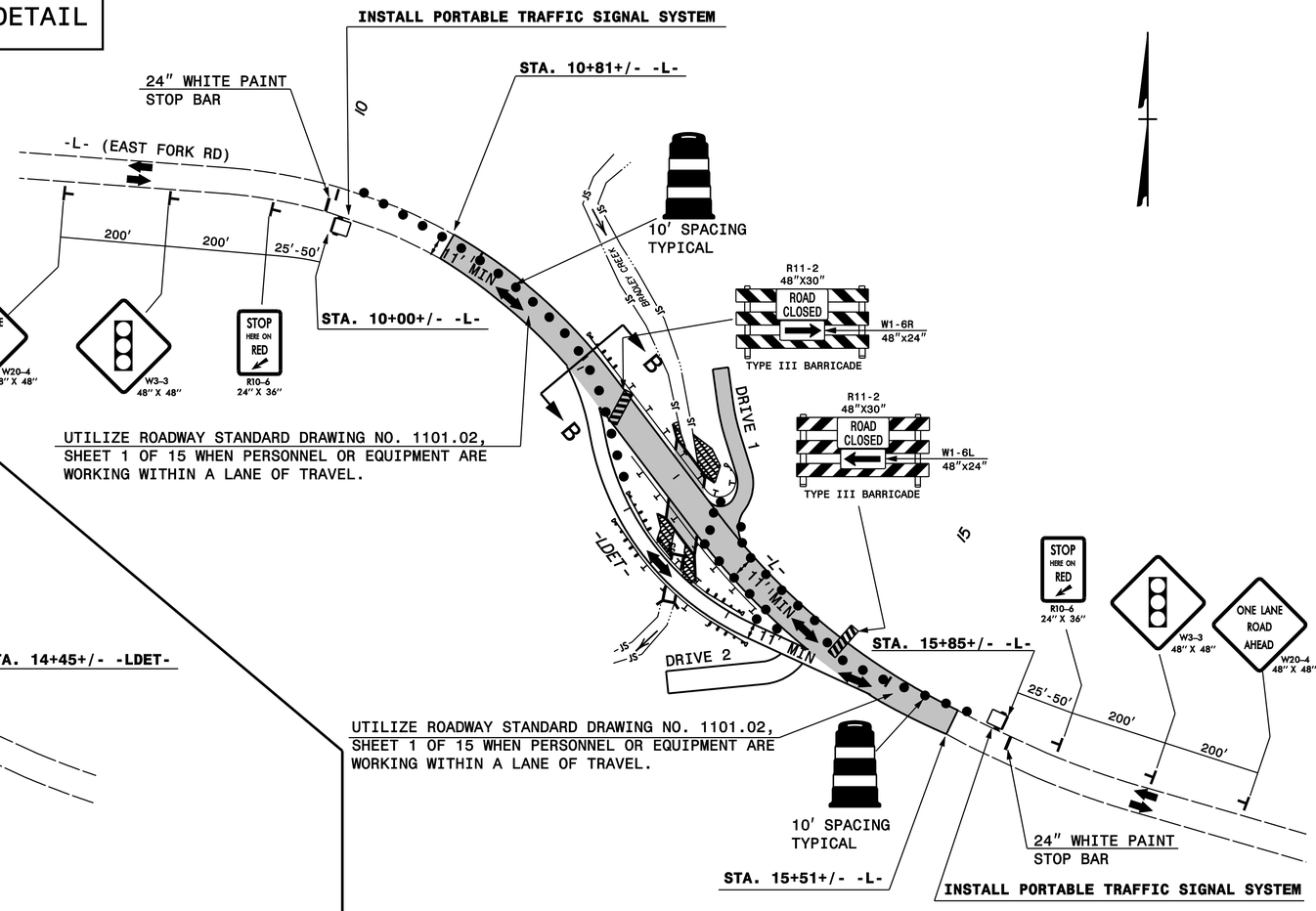
PHASE I DETAIL





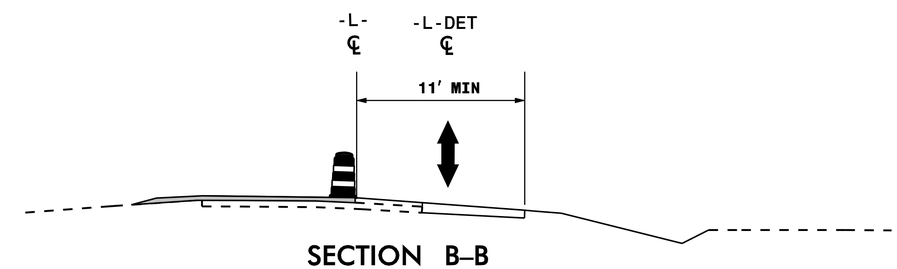
SECTION A–A

PHASE II DETAIL



UTILIZE ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15 WHEN PERSONNEL OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL.

UTILIZE ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15 WHEN PERSONNEL OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL.



SECTION B–B

INSTALL WORK ZONE ADVANCE WARNING SIGNS ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01 AND GENERAL NOTE 'I'. UTILIZE ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15 FOR OPERATIONS REQUIRING A TEMPORARY LANE CLOSURE AS IDENTIFIED IN GENERAL NOTES 'C' AND 'D'.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 1/20/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN

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09/08/99

WBS: 17BP.14.R.122

CONTRACT: DN00675

REVISION 01-17-19: UPDATED CONTRACT NUMBER FROM DN00290 TO BE DN00675.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	PMP-1

APPROVED: _____

DATE: _____

SEAL

NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS.

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY :

JENNIFER D. FARINO

030952 ON 10-31-2018

THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 137 ON SR 1107 (EAST FORK ROAD) OVER BRADLEY CREEK

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE
BRIDGE NO. 870137

FINAL
PAVEMENT MARKINGS

PA	WHITE EDGELINE	PAINT (4")
PI	YELLOW DOUBLE CENTER	PAINT (4")

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR AS DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1107	PAINT	N/A

PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) ALL EXISTING SIGNS ON WOOD & U POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

PLAN PREPARED BY: RS&H ARCHITECT-ENGINEERS-PLANNERS, INC.

JENNIFER FARINO, PE — PROJECT ENGINEER

SEAN KORTOVICH, EI — PROJECT DESIGNER

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING TITLE SHEET & PAVEMENT MARKING SCHEDULE
PMP-2	PAVEMENT MARKING DETAIL

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09/08/99

17BP.14.R.122

REVISION 01-17-19: UPDATED CONTRACT NUMBER FROM DN00290 TO BE DN00675.

SYMBOL AND PAVEMENT MARKING LEGEND

PA	WHITE EDGE LINE (4")
PI	YELLOW DOUBLE CENTER (4")

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	PMP-2

APPROVED: _____

DATE: _____

SEAL

NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS.

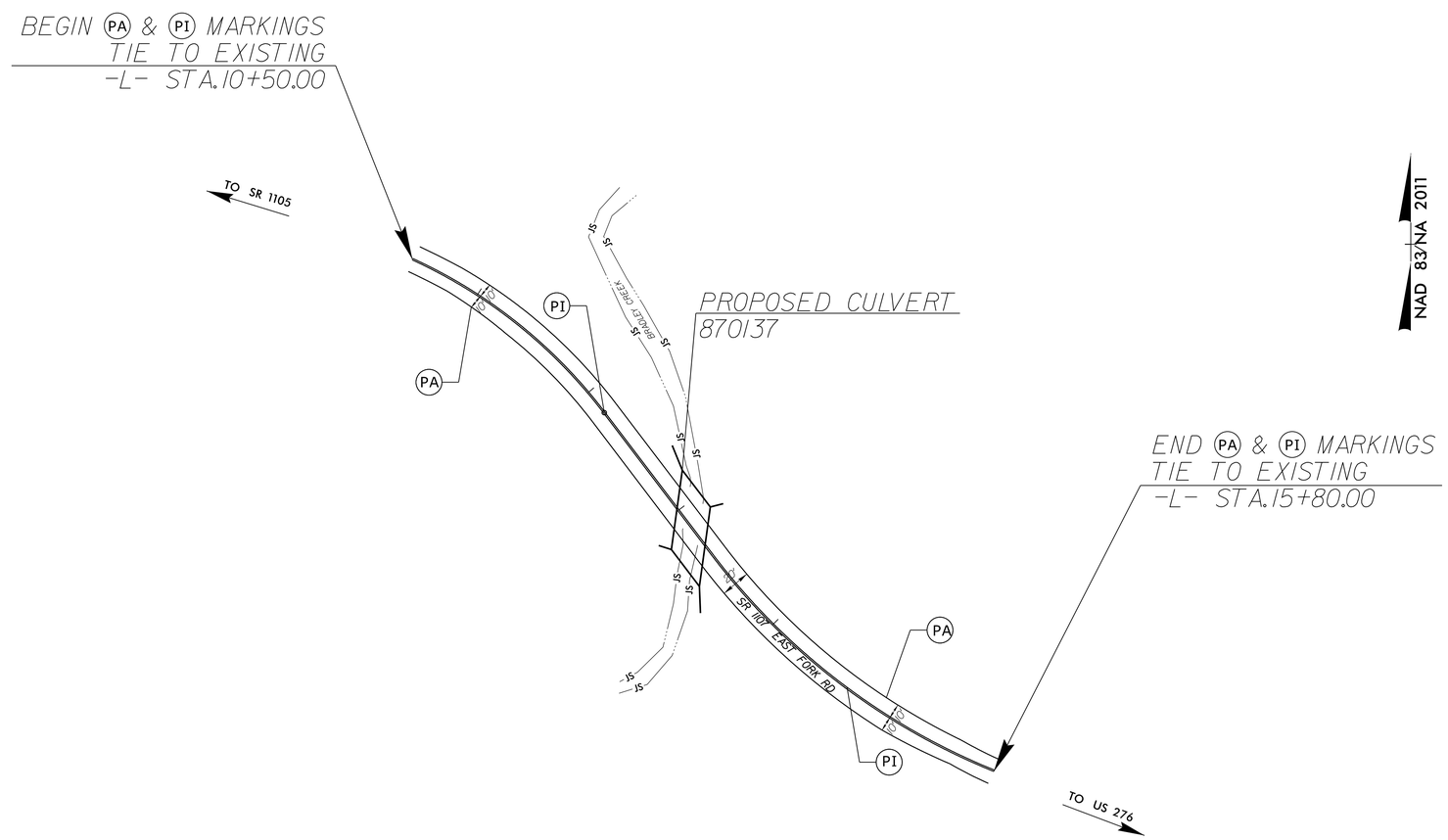
THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY :

JENNIFER D. FARINO

030952 ON 10-31-2018

THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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PAVEMENT MARKING DETAIL

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WBS: 17BP.14.R.122

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.122	EC-1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
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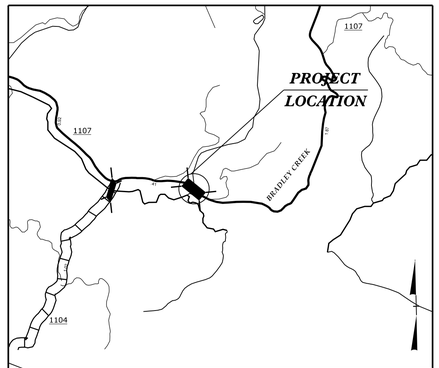
17BP.14.R.122	N/A	ROW, UTL
17BP.14.R.122	N/A	CONST



VICINITY MAP N.T.S.

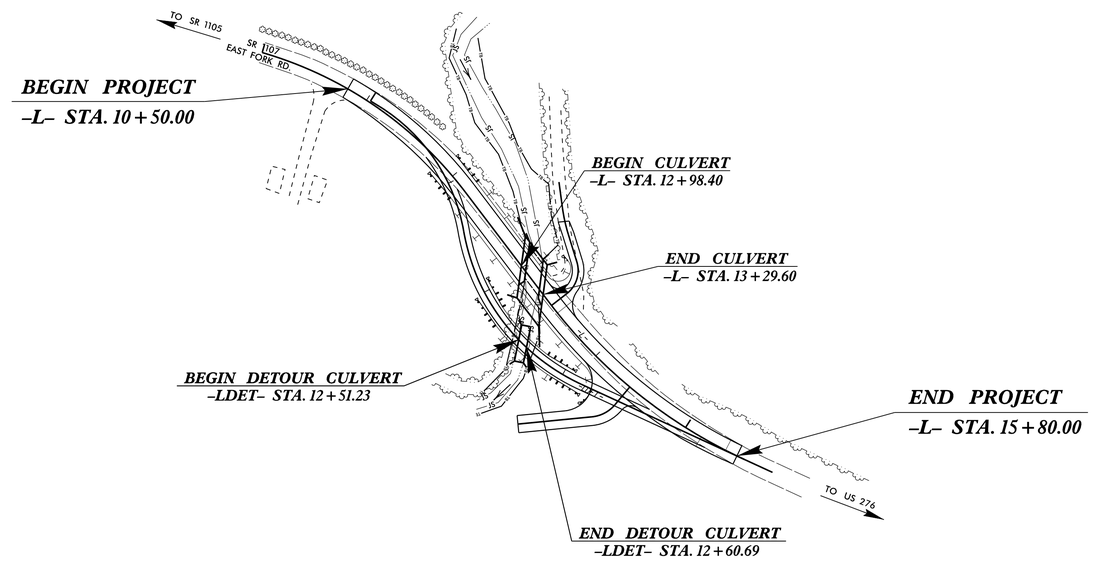
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 137 OVER BRADLEY CREEK ON SR 1107 (EAST FORK ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle/ Coir Fiber Wattle	SW CFW
	Wattle/ Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone Exist
From Sta. 10+81
to Sta. 15+51
Refer To E. C. Special Provisions for Special Considerations.

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

25 0 50

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:

1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610

2018 STANDARD SPECIFICATIONS

Designed by:

Will Weathersbee, P.E. *3161*
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

Roadway Standard Drawings

The following roadway <u>english</u> standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

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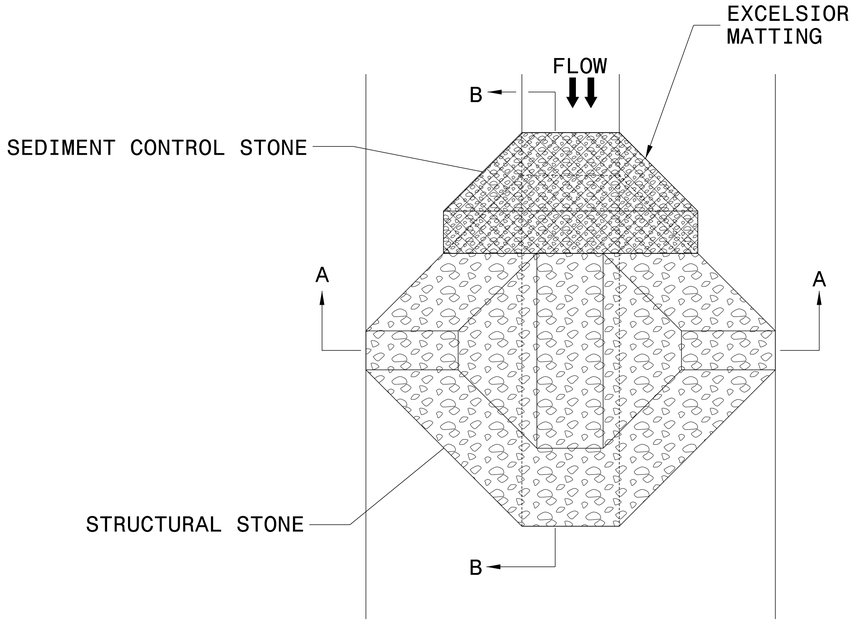
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

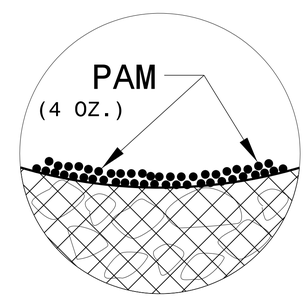
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

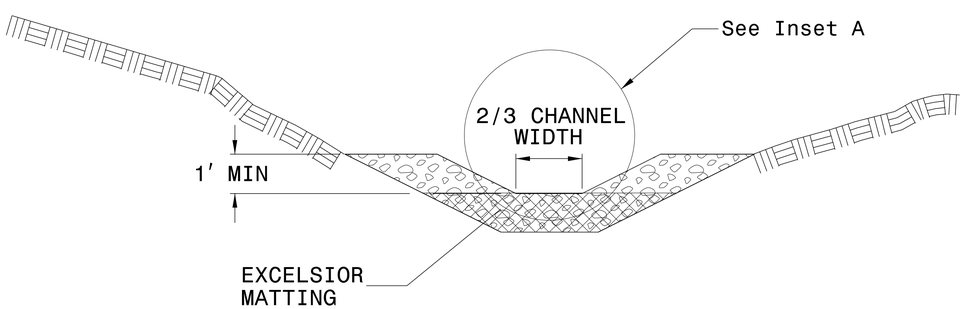
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

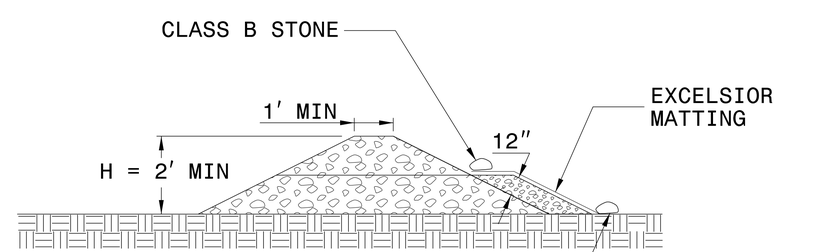
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	EC-3

RS&H

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

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8/17/99

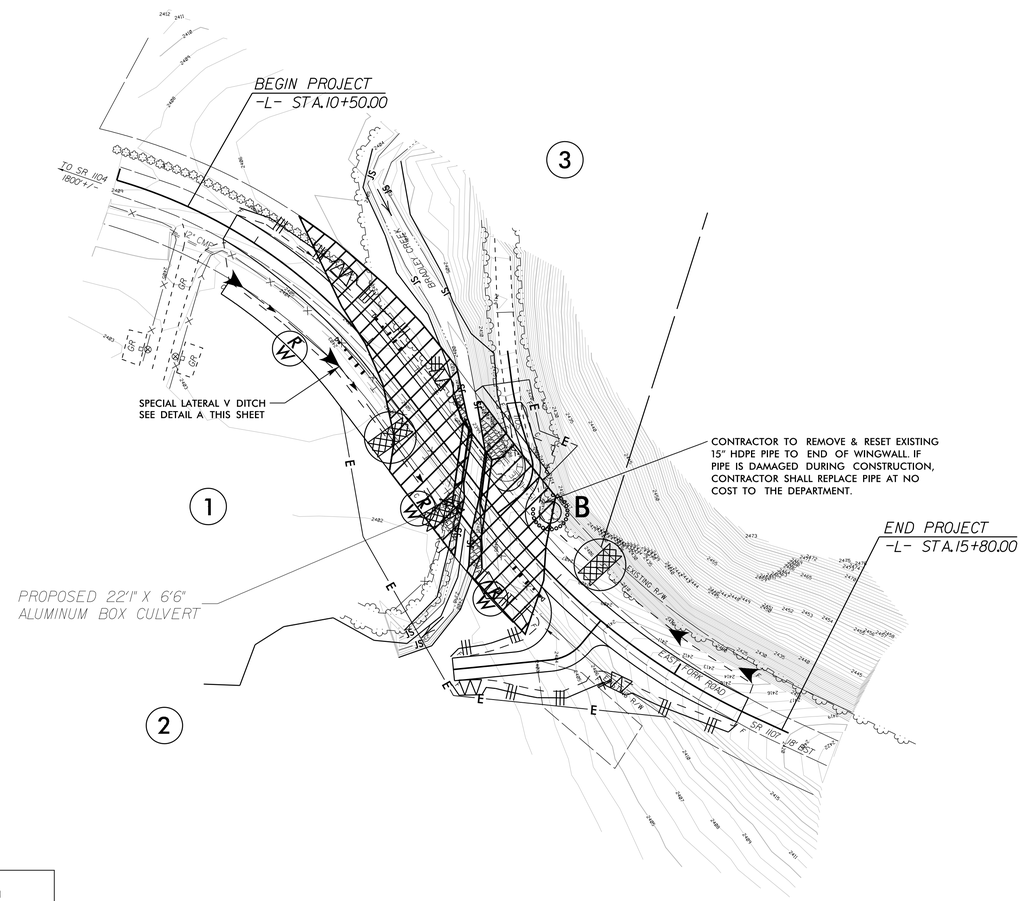
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	EC-4/CONST.4

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

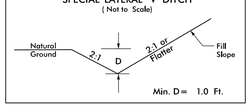
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NAD 83/NA 2011



DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 11+00 TO STA. 13+35 –L– (RT)

INSTALL DRIVEWAY PIPE DURING CLEARING & GRUBBING PHASE

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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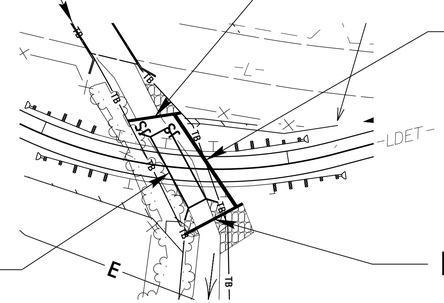
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	EC-5

CULVERT CONSTRUCTION SEQUENCE –L– STA. 13+14

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. STAGE 1 – CONSTRUCT IMPERVIOUS DIKES FOR THE DETOUR AND INSTALL 42 INCH TEMPORARY PIPE, DIVERTING FLOW THROUGH THE TEMPORARY PIPE.
3. CONSTRUCT PROPOSED DETOUR CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY PIPE FOR THE DETOUR. DIVERT FLOW THROUGH THE DETOUR CULVERT.
5. STAGE 2 – CONSTRUCT IMPERVIOUS DIKES FOR THE PROPOSED CULVERT AND INSTALL 42 INCH TEMPORARY PIPE, DIVERTING FLOW THROUGH THE TEMPORARY PIPE.
6. CONSTRUCT PROPOSED CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
7. REMOVE IMPERVIOUS DIKES AND TEMPORARY PIPE. DIVERT FLOW THROUGH THE PROPOSED CULVERT.
8. COMPLETE ROADWAY.

STAGE 1



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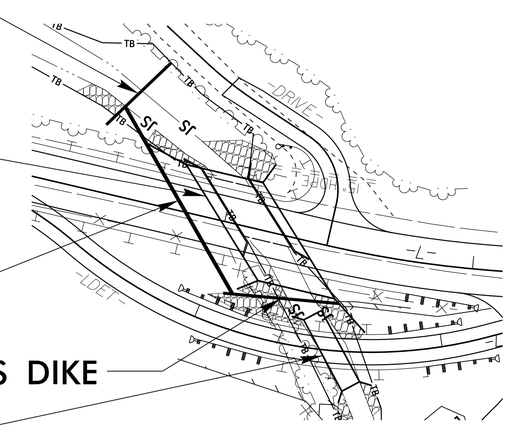
STAGE 2



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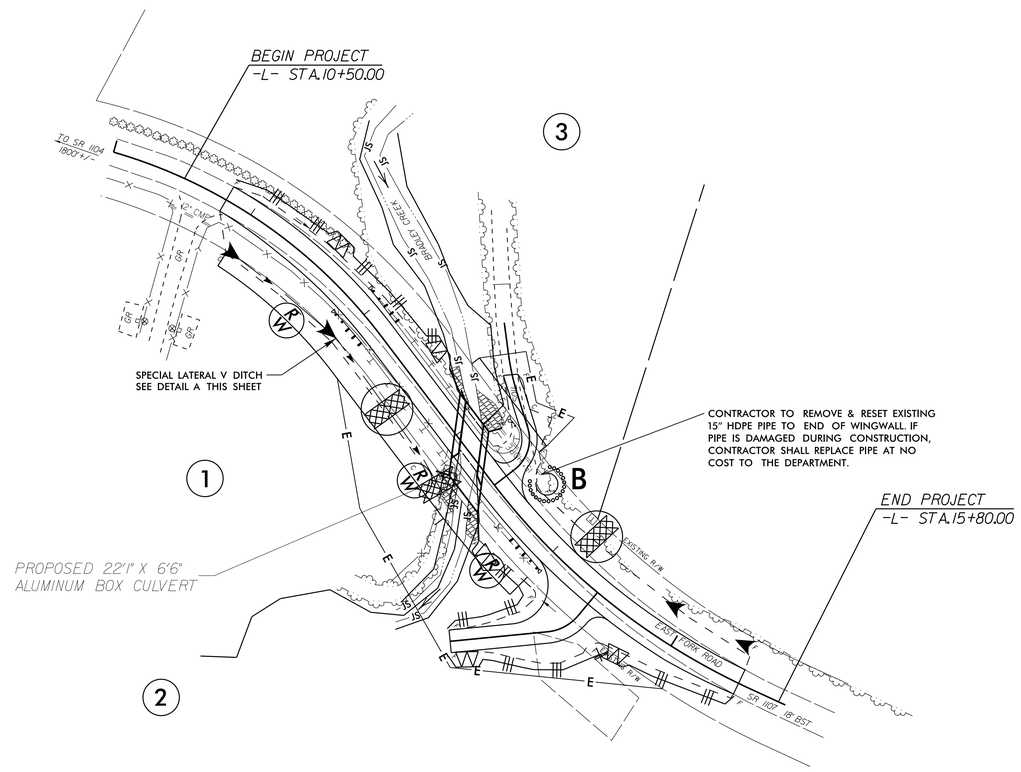
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	EC-6/CONST.4

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NAD 83/NA 2011



DETAIL A
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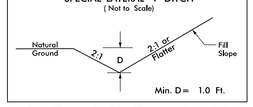

FROM STA. 11+00 TO STA. 13+35 –L– (RT)

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone Exist
From Sta. 10+81
to Sta. 15+51
Refer To E. C. Special Provisions for Special Considerations.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	EC-7/CONST.4

DETOUR

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NAD 83/NA 2011

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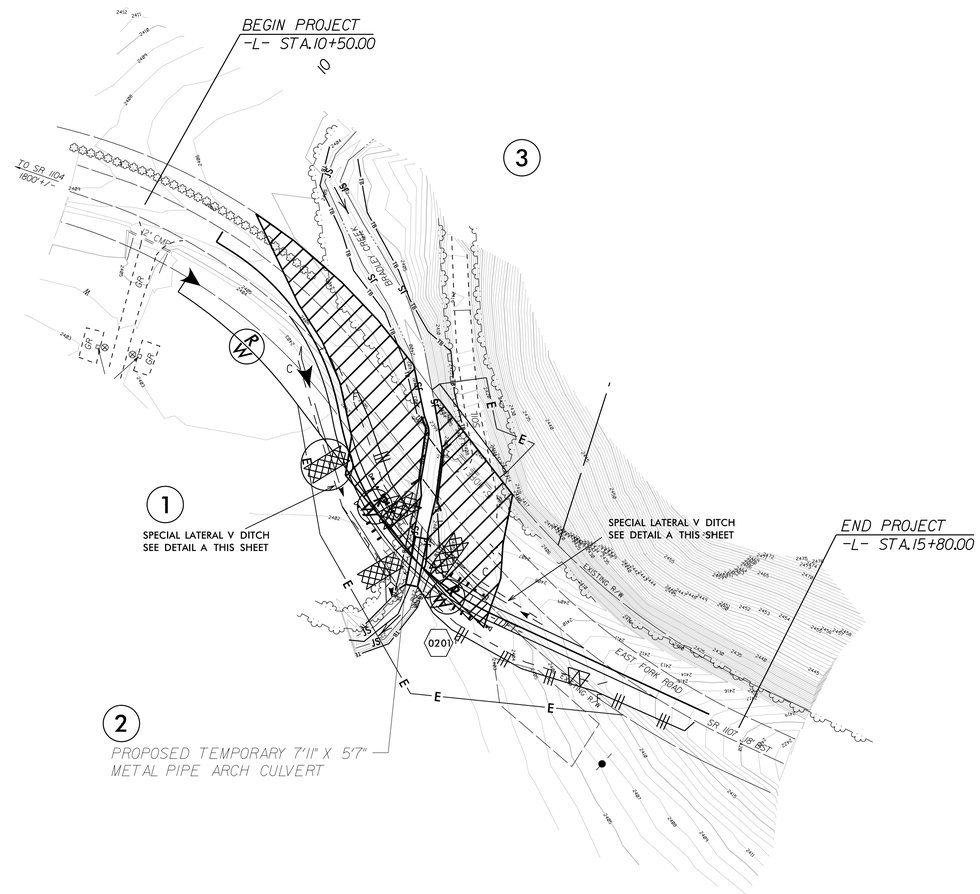

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SPECIAL LATERAL 'V' DITCH
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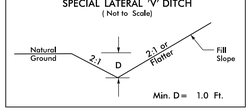

FROM STA. 10+92 TO STA. 12+62.99 –LDET– (RT)
FROM STA. 12+58.33 TO STA. 13+50 –LDET– (LT)

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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17BP.14.R.122	EC-8/CONST.4

DETOUR

NOTE:
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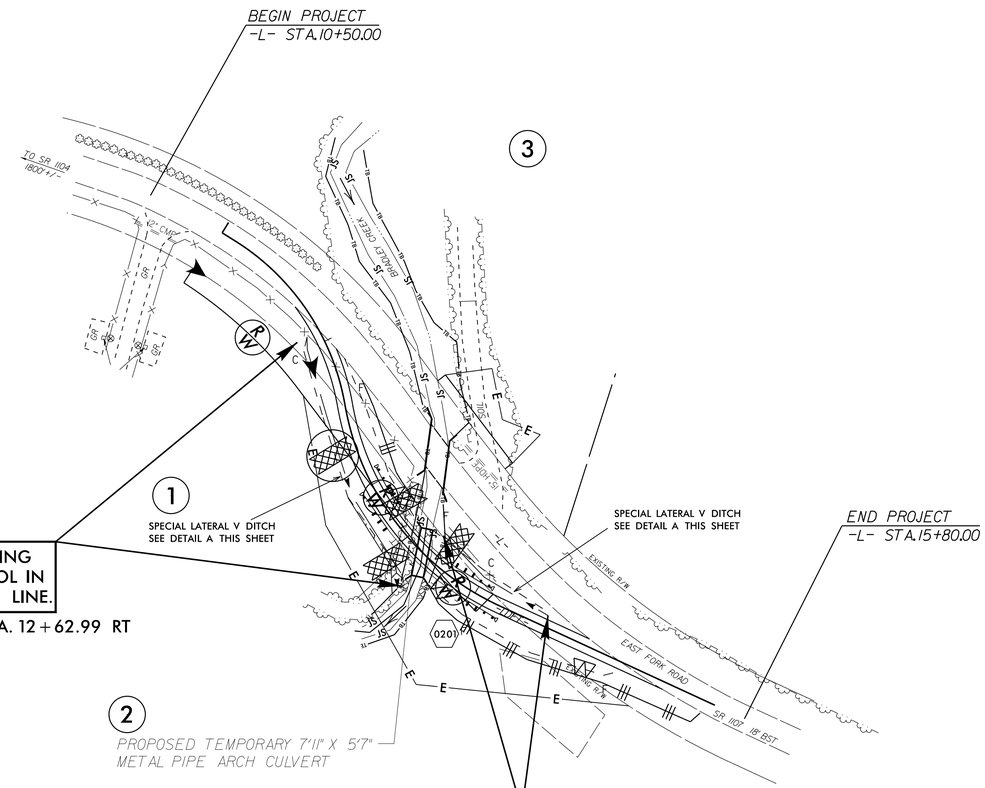
NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NAD 83/NA 2011



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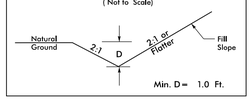

FROM STA. 10+92 TO STA. 12+62.99 –LDET– (RT)
FROM STA. 12+58.33 TO STA. 13+50 –LDET– (LT)

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

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Refer To E. C. Special Provisions for Special Considerations.

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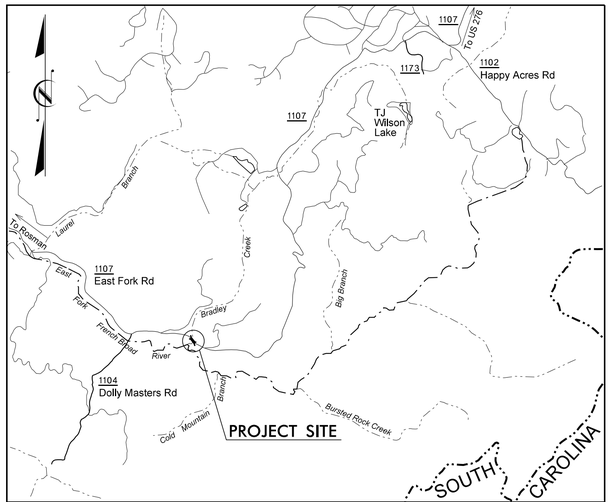
UPDATED DESIGN FILES 6/2/16 9/11/15

WBS ELEMENT: 17BP.14.R.122

CONTRACT: DN00675



VICINITY MAP

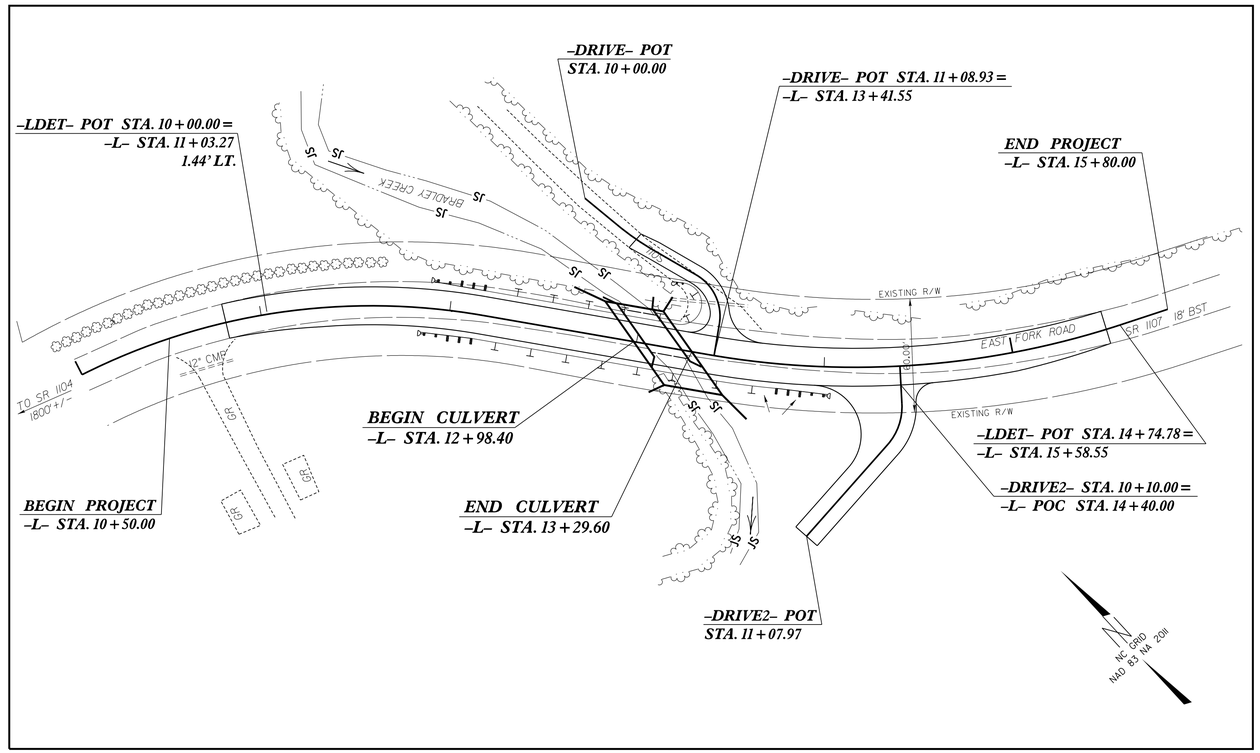
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	UO–1

UTILITIES BY OTHERS PLANS
TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 137 OVER BRADLEY CREEK ON SR 1107 (EAST FORK ROAD)

TYPE OF WORK: AERIAL & BURIED TELEPHONE



Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828·253·2796
Tri-Cities, TN 423·467·8401
Knoxville, TN 865·546·5800
Spartanburg, SC 864·574·4775
Charleston, SC 843·974·5650
Middlesboro, KY 606·248·6600
Charlotte, NC 704·357·0488
Boone, NC 828·355·9933
Atlanta, GA 770·627·3509
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GRAPHIC SCALES

30 15 0 30 60
PLANS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO–1	TITLE SHEET
UO–2	UTILITIES BY OTHERS PLAN SHEET

UTILITY OWNERS ON PROJECT

(1) POWER – DUKE ENERGY

(2) TELEPHONE – COMPORIUM (CITIZENS TELEPHONE COMPANY)

PLANS PREPARED BY:

Vaughn & Melton
Consulting Engineers
1318-F PATTON AVE.
Asheville, NC 28806
828·253·2796

PREPARED FOR THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699–1591
PHONE (919) 250–4128
FAX (919) 250–4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Lynn A. Mann, P.G. UTILITIES PROJECT DESIGNER

V&M PROJECT #31430-02
TRANSPORTATION\31430-02\TRANS 137\UTILITIES\UO-1.DGN

DocuSign Envelope ID: D085E041-9781-4B77-8600-8B261D5C6DFA

UPDATED DESIGN FILES 9/11/15 6/2/16

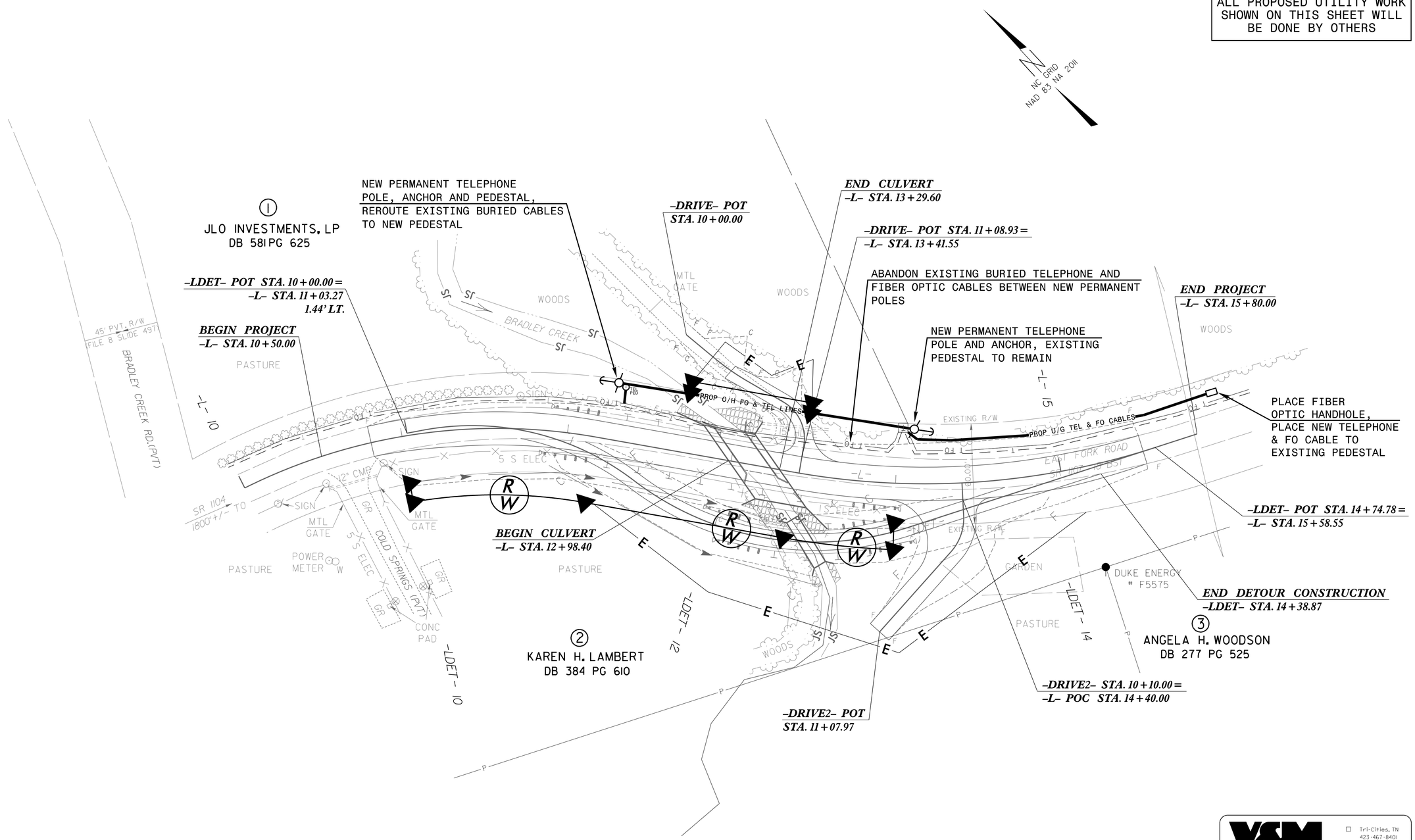
WBS ELEMENT: 17BP.14.R.122

CONTRACT: DN00675

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.122	U0-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



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